



Health-promoting dense urban spaces?

– People's perception of public squares in Malmö

Anna Jönsson

Independent project • 30 hp

Swedish University of Agricultural Sciences, SLU Department of people and society

Outdoor Environment for Health and Well-being Master's Program

Alnarp, 2021



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Anna Jönsson

Supervisor: Elizabeth Marcheschi, SLU, Department of people and society
Assistant supervisor: Fredrika Mårtensson, SLU, Department of people and society
Examiner: Caroline Hägerhäll, SLU, Department of people and society
Co-examiner: Jonathan Stoltz, SLU, Department of people and society

Credits: 30 hp
Level: A2E
Course title: Master Project in Landscape Architecture
Course code: EX0858
Programme/education: Outdoor Environments for Health and Well-being Master's Program

Place of publication: Alnarp
Year of publication: 2021
Authorized cover picture: Malmö stad, 2019

Keywords: Urban densification, urban density, the city of Malmö, urban planning processes, physical and social aspects, human health outcomes, environmental perception, crowding, stress, pleasantness, dense urban places, stress restoration, attention theory, restorative environment, quantitative data, qualitative data, descriptive statistics, thematic analysis.

Swedish University of Agricultural Sciences
Department of people and society

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Preface

This thesis concern urban densification and people's perception of it. My interest for this subject depends a lot on my occupational experience within urban planning, as well as my personal background. I grew up on the countryside in Scania; and although I enjoy the city pulse, it is still fundamentally important for me to have space as well as contact with natural elements as part of my own health.

Studying landscape architecture on an advanced level has made me realize how important it is to fight for the cause of people's health and well-being in urban environments. During my employment years I have noticed that people's health often is deprioritized when it comes to urban densification processes. People and their beneficial needs as overall users of the urban environments are constantly being put aside in favor for e.g., financial gain, status projects, fast decision-making processes, house building due to critical housing shortage; creating dense urban structures with fewer and smaller open spaces for people to share. I believe that landscape architects can make a difference in the professional arena regarding how urban environments and densification impact people in their everyday life. Since urban densification is an ongoing trend, I want this thesis to shine some light on the pros and cons around urban densification and its impact on people.

Anna Jönsson
Alnarp, 2021

Abstract

Urbanization through densification is topical today in many countries and cities around the globe; including the city of Malmö in Sweden which is the fastest growing city in the country. This explorative study of densification had the city of Malmö as case for investigating how people perceived some of their public squares. Perceived crowding, stress and pleasantness were identified as important factors to investigate in relation to urban densification. The methodology used for this study applied a mixed method approach by means of questionnaire and expert observations, including quantitative and qualitative information. The results confirm that dense urban squares are associated with crowding and stress, but lower if perceived pleasantness overall is higher. Higher perceived crowding and stress is attributed to various physical and social aspects of the environment, such as e.g., crowds, traffic, noise, tall buildings and little presence of greenery. It is also suggested that perceived levels of crowding and stress go hand in hand with perceived levels of pleasantness as well as familiarity with place make spaces perceived as more pleasant. Data further indicated how individual and situational factors influence the perception of the urban places, with factors related to gender, age and background, influencing feelings of purpose and belonging to a community. The results also suggest that greenery is experienced as scarce and that such natural features are crucial for a positive experience of the dense urban spaces. Overall, the results indicate that dense urban places in the city of Malmö, are perceived as crowded and stressful but also quite pleasant which imply that the city's attractiveness for urban dwellers does not need to erode and tear on their health, if development is careful and attention is paid to much needed restorative qualities.

“...nothing gained by overcrowding...”

“...something lost by over-spacing...”

~ Sir Raymond Unwin

(British architect and city planner)

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1. Introduction

1.1. Urban densification as a human health problem

Large populations of people have lived on small surfaces for more than 5000 years (Fassio et al. 2013; Snell & Bhullar, 2019). Many of these cities have continued to grow due to urbanization and human development (Kasim et al, 2019). City living has always attracted people because they provide people with many things such as:

- Good services
- Education
- Work possibilities
- Cultural and social opportunities
- Amusement
- Good quality housing
- Quality medical care
- Access to more public and sustainable transport options (Skovbro, 2002; Snell & Bhullar, 2019; Williams et al. 1996).

Cities can offer a wide palette of opportunities which fit people's needs and aspirations, making everyday life convenient and contributes to quality of life (Skovbro, 2002). However, besides the many benefits of urban living, cities also provide obstacles that create challenges and problems for its residents as urbanization in cities continue, making urban environments crammed and dense (Galea et al, 2005). As cities are getting more dense, urban pressures become intensified and many health-related problems are at risk of causing people difficulties associated with psychophysiological deterioration (Kasim et al, 2019; Mechelli, 2019; Mumford, 1961).

The negative exposures in urban settings are many and city living has generally been associated with a higher risk for mental as well as physical maladies (Dye, 2008; Snell & Bhullar, 2019; Mechelli, 2019). Frequent and prolonged exposure to conditions available in urban environments, cause negative reactions that affect people's psychophysiological resilience, which result in reduced health, including a lowered quality and satisfaction of life (Jackson, 2003; Snell & Bhullar, 2019; Ulrich et al. 1991). One of the properties known to be generally beneficial for people's health and well-being, which many cities are experiencing a shrinkage of, is nature (Hedblom et al, 2018; Kasim et al, 2019). Natural elements serve people well since it reduces stress levels that otherwise, over time and through intense exposure, can cause health related problems that are difficult to recover from (Ode-Sang et al, 2016; Ulrich et al. 1991).

Stress and stress-related health problems, such as e.g., cardiovascular and respiratory diseases, depression and anxiety, are an increasing global health issue in today's cities (Hedblom et al, 2018; Mechelli, 2019). A lack of restorative environments, which natural elements can provide, crowding, noise, air pollution and lowered urban environmental qualities, among other problems (i.e., environmental stressors), are becoming more profound in cities than anywhere else on the planet (Hedblom et al, 2018).

The fact that cities are still growing, raise a number of issues on its effect on people in the long run (Newman, 2006). Urbanization through densification is predicted to continue for a long time to come which most probably will increase health problems in city dwellers (Hedblom et al, 2018; Newman, 2006).

This continuous movement create concerns about already known negative impacts of urban living; where the process of densification results in additional negative effects on people and their health (Adli, 2011; Fassio et al. 2013; Grahn & Stigsdotter, 2010; Lin et al. 2015; Medvedeva et al. 2017; Newman, 2006).

Current urbanisation through densification, generates a fragmentation and reduction of urban green spaces, as an answer to efficient land use activity, where new housing and modern urban infrastructures are demanded (Hedblom et al, 2018; Kasim et al, 2019; Newman, 2006).

Densification of Swedish cities have currently lasted for the past decade and has led to a decrease of greenery in our Swedish cities (Boverket, 2016). It has also led to an increase of public health problems through higher prevalence of crowding and stress; including other factors mentioned which affect people's health and quality and satisfaction in life (Boverket, 2016; Fassio et al. 2013; Lin et al. 2015).

Approximately, 87% of the Swedish population live in larger cities as of today (SCB, 2020). Thus, many Swedish cities are, like many other cities world-wide, facing the challenge of having to grow as a way to cope with continued population growth, where the strategy of densification is applied in favour of a more sustainable urban development (Low & Lawrence-Zúñiga, 1990). The city of Malmö, located in the country's southern parts is the fastest growing city in the country at the moment and has for many years developed into a more compact city (see figure 1) (Malmö stad, 2019).



Figure 1. An aerial photo of the city of Malmö, where many densification projects are in progress. The Scanian landscape can be seen in the background and in the foreground one of the more densely built areas in the city, the Western harbour, can be seen, including the famous building Turning torso. (Source: Malmö stadsbyggnadskontor 2014)

Despite current knowledge about urban environmental impacts on people; very little has still been done to understand how people actually perceive dense urban environments and how the increasing densification affects their perception and health (Dye, 2008; Newman & Kenworthy, 1999).

The intention of this paper is to investigate effects of urban densification and bring attention to potential risks of this current urban planning process with regards to human beings and their health. Urban squares in dense areas of Malmö are chosen sites for performing this investigation. The choice of studying urban squares were due to the fact that they are a traditional type of dense urban spaces that have a clear function and usability in the urban context. A city that is undergoing many structural changes, is according to Boverket (2004), especially dependent on the presence of attractive urban open spaces, with many different functions that can enrich people's daily lives. Whether such spaces are influenced by densification and in which case, if and how, are questions remained to be asked in relation to functions that are expected and needed.

1.2. The concept of urban densification

Urban densification is an overall urban planning strategy, which dominates in many growing cities (Lin et al. 2015). Densification is a response to urban population growth, an intention to conserve agricultural land, as well as other problems related to a growing concern for the climate. It is a strategy where urban development is concentrated in a way so that existing urban structures become densified (Boverket, 2004; Boverket, 2016). The process is also termed urban land fill, in other words explained as efficient land use where existing so-called urbanized land are converted into other purposes of use, which generate an urban context where both people and urban infrastructures are closer together (Bramley & Power, 2009; Lin et al. 2015).

The concept and processes related to densification are well known by professionals within urban planning. The fact that it has become highly implemented strengthen the fact that it is suggested to be sustainable urban planning, resulting in efficient land use, sustainable transport options and a concentration of urban amenities that is seen as positive outcomes despite current unknown effects on the urban population (Ståhle, 2008; Wheeler, 2014). It is a process performed and argued for because it is explained to create benefits for urban environments, such as

- Centre for education and specialist work opportunities
- Less crime
- Energy efficiency
- Economic sustainability (Bramley & Power, 2009; Knöll et al. 2017; Lin et al. 2015).

The process of densification creates proximity between buildings as well as more people on a smaller surface. The term can be approached as a new urban form which can affect physical and social structures; dividing densification into physical densification and social densification.

Physical and social densification can affect people in different ways. Studies have shown that physical as well as social density influence people's perception of the environment by having effects on their perceived control over situations, restricting their personal space and their sense of freedom (Bell et al. 2001). Losing sense of control or sense of enough personal space is closely linked to induced stress levels (Lepore et al. 2003). Perceived physical and social density are subjectively experienced with factors related to the individual and the situational conditions (Bell et al. 2001). Physical density is often described and perceived in terms of e.g., high building structures, close proximity between buildings or tight presence of different infrastructures and services (Knöll et al. 2017).

Social density is acknowledged as the presence of interpersonal interactions i.e., amount of people present in a given area (Lepore et al. 2003).

Social density and physical density are in a constant dynamic interplay, making the two dimensions closely linked, affecting and sometimes even resulting from one another. It is how these conditions interplay, that create a basis for how the environment is perceived by people residing there (Lepore et al. 2013).

1.3. People's perception of dense urban environments

People have an inherent need to experience their immediate surroundings and do so through perception of sensory information collected by the sensory system, more known as the five senses; sight, hearing, smell, taste and touch (Jakobsson, 2009; Spirn, 1998). Through cognitive and emotional processes, people get to understand, learn and behave adequately in the environment, for example in order to find shelter from weather or avoiding potentially dangerous situations (Spirn, 1998; Bell et al. 2001). The term perception and how people perceive the environment, is therefore basic for human functioning and survival, where perception broadly described, include the manner in which people experience and assess their immediate environment (Gifford, 2014; Tuan, 2008).

Urban settings are identified as environments that stimulate human perception and experiences in a way that have consequences for human well-being and health (Parsons, 1991; Bell et al. 2001). All environments contain many different stimuli which result in perceptive responses, behaviours and emotions. These responses can cause negative health outcomes in people when exposure to environmental stressors (e.g., crowding, noise, pollution etc.) becomes too intense or when exposure is prolonged without the possibility to find enough recovery or reach homeostasis (i.e., adaptation) (Bell et al. 2001; Bilotta & Evans, 2013; Cohen et al. 1986 & Gifford & McCunn, 2013). Stimuli overload is often stress-related and is associated with other psychophysiological reactions or aftereffects, which result in reduced human health outcomes due to people's urban environmental perception (Bell et al. 2001).

1.4. Urban planning regulated by law for assertion of people's health

Sweden has laws and regulations formulated so that floor plans supporting human health and well-being can be developed in city planning processes and visions (Boverket, 2016). By means of these laws and regulations, professionals within city planning are to create urban environments that are supportive of people's health (WHO, 2009). The human health perspective in urban planning is regulated in inter alia the planning and building act (Plan- och bygglagen, PBL) and the environmental code (Miljöbalken). Both PBL and the environmental code contain several chapters and paragraphs conducted to support urban development plans. In the planning and building acts it is for example stated that planning is to be applied to give "...a purposeful structure and an aesthetically appealing design..." "...from a social viewpoint good environment..." that is not "...inappropriate with regards to people's health and safety..." (PBL, Chapter 2, 2010:900).

The process of urban densification, however, pose a risk of making it difficult to achieve and uphold laws for urban development that seek to and aim for providing environments that support people's health (Jackson, 2003). Urban densification as a result of current city planning practices can therefore at the moment be regarded as an important as well as central determinant to future human health outcomes (WHO, 2009). Urban planning through densification is at the same time often a result of methods produced and found in local regulations as well as political goals; partially making city planning trends a product of political purposes. Thus, not necessarily working towards urban sustainability and public health but is instead a vote-getter appealed by the interest and attraction of urban development processes (Lin et al, 2015).

1.5. The process of urban densification in the city of Malmö

For many years the city of Malmö has had to accommodate for the continuous population growth and a denser city has been a way to solve this task (Malmö stad, 2018).

Densification is realized as a sustainable urban development form, resulting in profits where a reduction of segregation and other societal barriers, economic sustainability, management of climate requirements and a denser presence of services is reached. In the municipality's governing documents, a denser city is described as a contributor to a healthier city where the urban population is less likely to face psychophysiological illnesses (Malmö stad, 2018). This is to be achieved by multifunctional spaces in the dense urban environment that shall encourage physical exercise and mental recovery (Malmö stad, 2018). Although the negative aspects of densification are expected, compromises and certain priorities have to be made between different interests (Malmö stad, 2018). People's health in relation to densification processes are acknowledged but not an essential priority compared to the overall goals of housing construction and job creation (Malmö Stadsbyggnadskontor, 2008). A dense city with an attractive and intense city lifestyle is the municipality's vision. This is what is wanted and while the ambition suggests that it will not necessarily affect people's well-being and health, it is a risk taken and presented as a secondary interest.

2. Theoretical framework

People's perception of the built and natural environment does have health-related outcomes (Gifford, 2014; Seamon, 2000). Urban environments and furthermore, dense urban environments, that is due to processes of physical and social densification, are at risk of further exceeding people's overall capabilities; making it more difficult to support human well-being and health in dense urban settings (Adli, 2011; Townsend et al. 2018; Tuan, 2008). In order to gain an understanding of how people's health and health outcomes are associated with environmental perception, a theoretical approach is implemented in this thesis.

The majority of people reside in urban settings every day; in environments that can be demanding and mentally fatiguing; leaving people with a need of having *psychophysiological restoration* (Basu et al. 2019). According to research and developed theories, restoration has been defined as an important process, where a human – environment interaction, allow people to recover from both cognitive and emotional energy depletion (i.e., stimuli overload causing e.g., stress) (Kaplan & Kaplan, 1989; Hartig et al. 2003). Natural environments have been identified as particularly restorative due to the fact that natural patterns are easier to decode and be understood by our sensory modalities (i.e., demanding little mental effort) (Kaplan & Kaplan, 1989; Basu et al. 2019; Ulrich, 1984). Psychophysiological responses affecting health outcomes have been explained in the *perceptual fluency theory*, which suggests that artificial shapes or built scenes evoke more negative effects than natural settings (Van den Berg & Staats, 2018). Furthermore, nature has positive effects on stress reduction as well as other psychophysiological effects on attention recovery (Basu et al. 2019; Ode-Sang et al, 2016; Ulrich, 1984; Van den Berg & Staats, 2018).

The theories that of attention restoration (ART) and stress reduction (SRT) also describe that urban settings do not support restoration processes to the same extent as natural settings do (Hartig et al. 2003). Prolonged exposure to stress and lowered possibilities to restore psychophysiological functions negatively affect human health outcomes and overall well-being (e.g., stress-related and public health problems, at risk of increasing depression, interpersonal distancing, isolation, anxiety, fear, sadness, lowered performance, headache, higher blood pressure and muscle tension) (Ulrich et al. 1991). As a matter of fact, too much exposure to stressful settings (e.g., dense urban situations), where direct attention is overly used lead to irritability, decreased concentration and increased levels of stress (Adli, 2011; Bilotta & Evans, 2013; Hotwani & Tripathi, 2017; Stack & Shultis, 2013; Ulrich et al. 1991 & Van den Berg et al. 2015).

However, when people are stressed, they are in need of finding restorative influences which many urban environments are not capable of catering (Ulrich et al. 1991). Several findings from previous research have pointed out how stress is connected to a lack of restoration possibilities, which forces people to develop new coping strategies that often

result in a form of stress management without actual psychophysiological restoration, which further negatively effects health and well-being (Andrade & Devlin, 2015; Küller, 1991). *Perceived stress* is therefore a crucial factor accounted for in this research with the purpose of gaining a better understanding of the effects of urban densification on people's health (Heberlein & Vaske, 1977).

Another vital factor found linked with effects of urban densification, is *perceived crowding*, which also create a lack of restorative possibilities associated with that of perceived stress (Booth & Cowell, 1976; Geetu & Tripathi, 2017; Küller, 1991). Perceived crowding has been defined as a psychological state that occur when the need for space is greater than what is available; causing people to become forced into engaging in the environment despite the fact that perceived personal space is not available, enough or reduced (Bilotta et al. 2013; Cohen et al. 1986). Physical and social aspects of urban density can hold features and mechanisms that result in perceived crowding as an effect from failed coping and insufficient stress restoration (Bell et al, 2001). Perceived crowding is therefore also a crucial factor to keep into consideration when investigating urban densification.

While *perceived crowding* lead to stress, there are other types of human – environment transactions in urban environments that are more supportive for human health. This is the case with perceived environmental pleasantness. *Perceived pleasantness* can be explained as a constant dynamic process, where the environment is individually appraised based upon individual preferences, abilities, goals and environmental demands (Küller, 1991). Perceived pleasantness is an important dimension of environmental assessment which makes it the overarching environmental quality indicator used by individuals to describe the degree to which an environment is perceived to be supportive in terms of aesthetics, affection and safety qualities (Bell et al. 2001; Küller, 1991).

Perceived pleasantness has also been discussed and presented as an important part of arousal theory which is influential in the theories of attention restoration (ART) and stress reduction (SRT). It suggests that perceived pleasantness can be associated with attraction or fascination via involuntary attention which stimulate restoration and reduce effects of prolonged arousal via direct attention (Bell et al. 2001; Hartig et al. 2003; Ulrich et al. 1991; Van den Berg & Staats, 2018). Furthermore, it has also been suggested that there is an association between perceived pleasantness and familiarity or relation to place, which can promote feelings of attraction, hence leading to a higher experience of pleasantness and liking of place as a result (Peskin & Newell, 2004; Reis et al. 2011). Although it is a valid contributor; research have similarly shown that dense urban environments can affect perceived pleasantness due to the environment being appraised as aesthetically unpleasing, unattractive and unsafe (Bonnes et al. 2013).

Dense urban environments lacking adequate physical and social features for enabling restorative environments, lastly puts emphasise on evolutionary theories as a vital reason for indicating the importance of people's basic needs for well-being and health. People's environmental perception of urban density, related to the current processes of urban densification, is for this reason investigated in this thesis (Bell et al, 2001; Bonnes et al. 2013; Townsend et al. 2018).

3. Research aim and objectives

Urban public space is a vital part of many people's everyday lives with potential implications on their health and well-being. With ongoing processes of densification, these spaces are under pressure, with the effect that the function of such spaces are likely to change.

The overall aim of this study is to explore how people in a city with ongoing densification, perceive a set of public squares in terms of perceived crowding, stress and pleasantness; including spaces overall attractiveness and how it relates to the design as well as other factors associated with the physical and social context.

Addressed research questions:

- How do people perceive dense urban squares in terms of crowding, stress and pleasantness?
- What physical and social aspects do people acknowledge as important?
- Is perceived crowding and stress connected with perceived pleasantness?
- Is familiarity with place associated with perceived pleasantness?
- How is the Covid-19 pandemic break out perceived to influence the experience of dense urban settings?

4. Method

This exploratory study applied a mixed method approach consisting of a questionnaire and expert observational landscape analysis supported by photographs and performed by the thesis author. The study was carried out at four dense urban spaces in the city centre of Malmö. See delineated area in figure 2. Respondents were approached at the four different case sites and asked to participate in the study through mentioned methodology. Data collection was performed during the months of June-September in the year 2020 and 200 people participated in total.



Figure 2. Map with a defined area for those parts which the municipality define as the city centre. The selected urban places are squares within this area. (Source: Malmö stad, 2018)

4.1. Case site settings

Within the denser parts of Malmö city centre, four squares were identified based upon their physical and social density; as they are registered and determined as so in digital geodata maps, produced by the municipality (Malmö stad, 2018) (see figure 3 & 4). The squares differ in terms of age, shape, size and overall content but are described as physically and socially dense urban structures in the city (Malmö Stadsbyggnadskontor, 2008).



Figure 3. Map showing the degree of densification in the city of Malmö. The intensity of physical and social density is demonstrated through blue fields. The darker the blue fields become, the denser the area is. As can be seen, the darker blue fields are mostly concentrated to Malmö city centre. (Source: Malmö stad, 2018)



Figure 4. Map showing location of the squares present within darker blue areas in Malmö city centre where it is physically and socially denser. (Source: Malmö stad, 2018)

The four squares that were part of the study are located in the urban context according to figure 5. The four squares are;

1. Lilla torg.
2. Gustav Adolfs torg.
3. Triangeltorget.
4. Konsthallstorget.



Figure 5. Map showing location of the squares according to numbered list above (i.e., 1. Lilla torg, 2. Gustav Adolfs torg, 3. Triangeltorget, 4. Konsthallstorget). (Source: Malmö stad, 2018)

A more detailed description of the squares follows.

4.1.1. Lilla torg

Lilla torg is a small square situated in the old heart of Malmö. Over time the square has become known to be a lively meeting place for people of all kind. The tiny square dates back to the 1590s and has since then been a place for all kinds of activities (Malmö stad, 2019). Today it is a square which is special since it is set in a well-preserved environment within the urban context. Lilla torg has gone from being a merchant's place to a place for entertainment and joy, thanks to the many outdoor seating areas of the restaurants and cafeterias which frames the square. Lilla torg is, as described by its name, a tiny square and is approximately 3 300 square meters large (Malmö stad, 2019) (see figure 6).

The observational analysis of physical and social urban density suggests that Lilla torg is a dense urban place with both physically and socially dense urban features. The square is framed by buildings that are between 2 and 6 stories high that has a cultural and older character (see figure 10 & 11). Physical and social available space is quite limited because of the actual size of the square and what is in it. Lilla torg is characterized by the presence of many restaurants and outdoor seating areas which suggests that the square is often well populated, both by people passing by and people visiting the different eateries. It is a square that holds different dense urban mechanisms (i.e., some taller buildings, small open surface, dense presence of different services). Even though it is a square location in the middle of Malmö, it is at the same time picturesque with its cultural atmosphere; cobble stone ground material, a couple of grown trees, adding greenery and shade, a lot of sun light present due to lower building heights as well as no immediate presence of car traffic because it is solely a pedestrian zone.



Figure 6. A bird view map of Lilla Torg in Malmö city centre. (Source: Malmö stad, 2018)

4.1.2. Gustav Adolfs torg

Gustav Adolfs torg, or Gustav as it is also simply called, and will be so further on, is an old, well-known square in the middle of the buzzing Malmö city centre (Malmö stad, 2019). The square contains both areas with concentrated greenery as well as open spaces (see figure 7). The open spaces are often used for different activities or events, but most commonly for local market commerce with for example fresh fruit, vegetables and cut flowers for sale Gustav also has grown trees and patches of greenery which create small oases (see figure 12 & 13). The character of the square has supposedly been the same from the beginning, when it was built in the early 19th century (Malmö stad, 2019). This historical, yet today, very dense urban space is still very sizeable with its roughly 13 700 square meters large surface.

The observational analysis of physical and social urban density at Gustav suggests that it hold features that indicate a presence of physical and social density. Social density is observed to be more present than physical because the square's surface is large which makes dense physical structures less prominent. Large and tall building structures are present but does not crowd the overall scale and size of the square. The square is socially dense because it is notably populated with a concentration of people located to parts of the square. People do not occupy the square for a longer period of time; the majority crosses the square on their way to somewhere else. The social density created by people passing by creates a higher tempo. The green structures of the square are important elements, since it adds shade and height to the big open space including acting as a noise canceller against the busy traffic roads adjacent to the northern and western parts of Gustav.



Figure 7. A bird view map of Gustav Adolfs torg in Malmö city centre. (Source: Malmö stad, 2018)

4.1.3. Triangeltorget

The present shape and size of Triangeltorget was established during the 1990s but the square was built and dates back to the early 1920s (Malmö stad, 2017). The square is situated between the central pedestrian zone and a well-known mall (see figure 8). Triangeltorget is called so in popular speech; the official name is simply Triangeln (Malmö stad, 2017). Even though the appearance of the current square is from recent years; this urban space is one of the eldest in the city of Malmö. According to old city maps, the urban space actually dates back to the middle ages and have had a lot of different applications historically (Malmö stad, 2017). Triangeltorget is a square which is an important node within the city and is a place that many people cross on their way to somewhere else. The size of Triangeltorget, the way it is shaped today, makes it approximately 2 400 square meters large or perhaps small.

The observational analysis of physical and social urban density suggests that Triangeltorget is a dense urban place with both physically and socially dense urban mechanisms. The square is proposed as physically dense because it is framed by buildings that are between 5 and 7 stories high, excluding the high-rise building that holds the shopping mall and a hotel which has an unknown number of stories, that all are from different building eras. Physical as well as social available space is also quite limited as a result of the size of the square and how it is situated in the urban form. Triangeltorget is characterized by its vicinity to many urban services which suggests that the square is well populated, i.e., socially dense, with people passing by, entering and exiting from every available corner. Triangeltorget is also a square where the majority of it connects to busy and noisy traffic roads. It is a square that is physically and socially dense in many ways because it is a small surface surrounded by tall buildings, a lot of services which makes it very populated as well as an area for different kinds of transport and traffic. It is at the same time an important urban space that connect different urban functions, while offering interesting design, grown trees, places to sit and a place to meet (see figure 14 & 15).

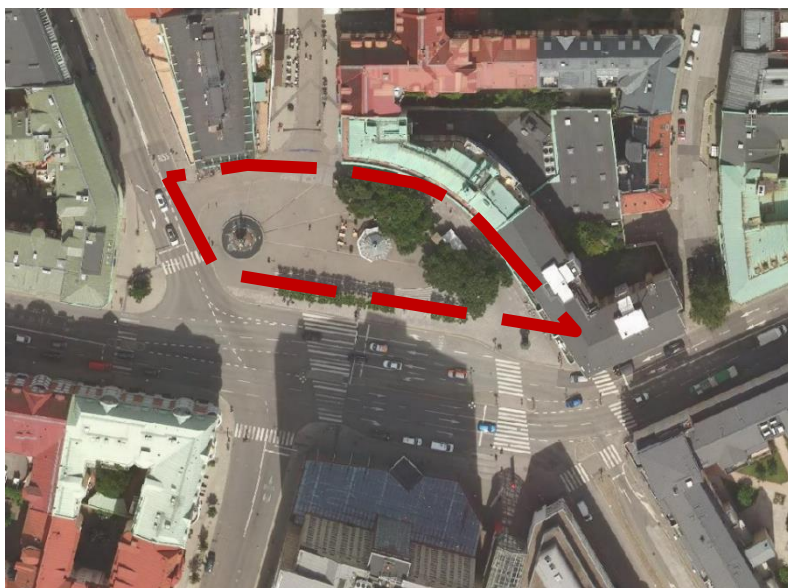


Figure 8. A bird view map of Triangeltorget in Malmö city centre. (Source: Malmö stad, 2018)

4.1.4. Konsthallstorget

Konsthallstorget is a square located outside Malmö art centre and adjacent to a very central park called Magistratsparken on one side, as well as a very busy street and a parking garage on the other sides (see figure 9). The square was completed in 2014 which means that it is very new and modern (White arkitekter, uå). Konsthallstorget is seen as a reliable meeting spot by many different user groups, among many are for example skaters which are commonly there because it is an urban space which invites to this activity (Skate Malmö, uå). The square is about 4 770 square meters in size but can in many ways be experienced as larger and as an extended part of the adjacent park. The existing park also contributes to the green and lush feeling of the otherwise concrete-like urban square. Konsthallstorget is an open and transparent space and is, besides a large stage and a featured art piece, furnished with different kind of seating areas and some greenery (see figure 16 & 17). This makes the square a very flexible open space with a lot of potential (Skate Malmö, uå).

The observational analysis of the physical and social density suggests that Konsthallstorget hold dense urban mechanisms. The square is quite large but may appear larger than it is because it consists of a monotonous concrete surface. The square may also appear as green due to its connection to the adjacent park. The park is at the same time more of a green backdrop rather than actually supplying the square with green structures that otherwise are fairly sparsely added to the square. The square is suggested as physically dense because it is surrounded by physical urban structures such as tall buildings, busy traffic and other urban infrastructures (e.g., parking garage). Besides dense physical characteristics present, social density is also experienced when people are constantly passing by, on foot or by bike, including people visiting the square for a longer period of time, either sun bathing on a bench or skaters performing stunts on their boards. Konsthallstorget is a very central square with a lot of activities happening. The square is situated in a physically and socially dense part of Malmö where many urban functions meet.



Figure 9. A bird view map of Konsthallstorget in Malmö city centre. (Source: Malmö stad 2018)



Figure 10 and 11. Showing two different views over Lilla torg.



Figure 12 and 13. Showing two different views over Gustav Adolfs torg.



Figure 14 and 15. Showing two different views over Triangeltorget.



Figure 16 and 17. Showing two different views over Konsthallstorget.

4.2. Participants

In this exploratory study, 322 people were asked to participate; 37% (N= 122) denied participation, making the remaining 63% (N= 200) the total amount of respondents, all answering to the questionnaire. 50 people participated per square and all responded to the same questionnaire. The respondents were in total N= 108 female and N= 89 male, including respondents N= 1 other and N= 2 prefer not to say with other gender preferences, with a mean age of M= 41,44 (i.e., age range between 22-80 years old). Figure 18 shows that the participants were majority female than male, including a minority of respondents with another gender preference.

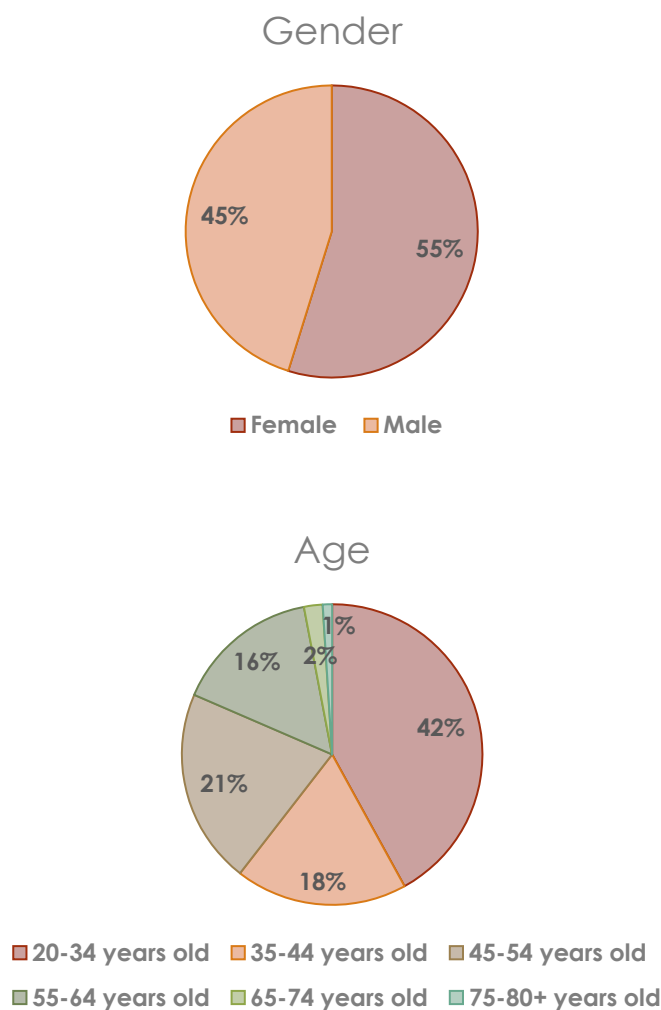


Figure 18. Illustrating descriptive statistics of participants' gender and age distribution.

4.3. Questionnaire

The questionnaire used to capture people's perception of urban density at the squares comprised the following items (see appendix 1):

1. Background information composed by demographic data accounting for gender and age.
2. Questions regarding familiarity with place, (i.e., how often one spends time at the urban place and how well the place is known and visited) presented firstly in multiple choice question and further on a 9-point Likert scale, where '1-5' indicates 'not at all/slightly so' and '6-9' indicates 'moderately/extremely so'.
3. Questions related to perceived crowding, stress and pleasantness, presented on a 9-point Likert scale, where '1-5' indicates 'not at all/slightly so' and '6-9' indicates 'moderately/extremely so'.
4. Open-ended questions for further explanations of what is perceived to affecting the perception of crowding, stress and pleasantness.
5. The questionnaire is finalized with dichotomous (i.e., yes or no question) and an open-ended question where the respondents had the possibility to express their view about the effects of Covid-19 pandemic and whether it has changed the perception of the urban place or not.

4.4. Data analysis

All quantitative as well as qualitative data derived by people's responses from the questionnaires were coded (see appendix 2) and reported in Excel. Compiled quantitative data was analysed, giving descriptive statistics to be reported. In order to answer to the thesis' research questions, the descriptive statistics given from the analysed quantitative data was described adopting two different techniques. One compared users' perception across the different case sites, while the other was performed to average together the respondents' answers, giving an indication of the overall perception regarding asked phenomenon. See respectively results in sections 5.1 and 5.2.

The qualitative data analysis was performed using thematic analysis as described in Braun and Clarke (2006). The thematic analysis is based on phases and in this study, the steps were the following: all the answers to the qualitative questions were read and written down in order to get to know the material and understand what information was relevant. In the next step, the answers were divided into groups, generating a code which summarized the information given in the answers. Codes that generated similar phenomena were then described and transformed into named themes which gave a clearer view of the qualitative data connected to produced codes. The last step connects the result to the research questions.

4.5. Ethical considerations

Three basic ethical considerations, that of full disclosure, confidentiality and voluntary participation, were applied (DePoy & Gitlin, 2016). Respondents of the questionnaire were approached at the squares and asked to participate. People who participated were fully notified about what the exploratory investigation entailed and that all partaking in the case study were anonymous. The questionnaire was designed so that the respondents did not have to share any personal information. The participants were also notified that the right to choose to participate or not was fully theirs (DePoy & Gitlin, 2016). During the participation, the respondents had the right to refuse answering any of the given questions, as well as having previous answers taken out. The collected data was, after finished implementation, well kept and only accessed by the thesis author and assigned supervisors.

Throughout the study implementation, considerations, given by the public health authority regarding the ongoing Covid-19 pandemic, were taken. The methodology was performed during, what was considered to be a reasonable time period, with regards to the current situation in pandemic times. The study was performed during the summer months of 2020, when the spread and risk of infection was at a lower degree. It made it possible to implement the methodology, including approach potential participants in a manageable way. It also became easier to perform the study during this time since it took place in the outdoors which made it possible to keep distance and take count for everyone's health and safety.

4.6. Method reflection

The main aim with using a mixed method approach was to explore urban density and the processes of urban densification through different angles. It was important to gain knowledge about how users perceive dense urban places but also what reflections and conclusions they drew about these impressions. With a questionnaire, composed of both quantitative measures and open-ended questions, this became possible. The questionnaire was designed to give the respondents an opportunity to self-appraise the chosen case sites, but important to recognize is that some responses might have been affected by situational conditions, making answers misleading and material insufficient to draw more general conclusions. Questions might have been misunderstood or too hard for the participants. Other aspects to consider, that can have had an impact on gathered data and final results, is the thesis writers' inexperience as an interviewer and general effects of the ongoing pandemic in 2020. Therefore, it cannot be eliminated that some important data have not been collected and able to be studied. It is also difficult to fully understand what other people feel and perceive, which one must be aware of when performing this kind of study.

Choosing to explore this topic, using squares as case sites, was initially argued for but it is important to recognize that this study also could have benefitted from exploring similar questions in other urban settings to further compare different urban environments and aspect of it in relation to urban density and how people perceive it.

The results of this study are built upon data giving descriptive statistics and qualitative results from thematic analysis. With more time at hand and perhaps with a chosen focus group, more correlated statistics and distinct results would have been found. Many of these factors imply that there is an incitement to further investigate this topic with an adjusted methodology and parameters regarding how urban density and urban densification processes are perceived and affecting people in different ways.

The study was performed and took place during a pandemic which resulted in a different presence of people in the public room. It has, among other things, potentially effected the intensity and presence of physical and social pressures otherwise more present in dense places in Malmö. This study might therefore have been affected by the effects of the ongoing pandemic. Less people present in the public areas of the city might have limited the level of participations including altering the overall perception of crowding, stress and pleasantness. The way in which people experienced the dense public areas of Malmö could have been changed to some extent, as a result of the pandemic, where density on a whole is perceived as overall intimidating or on the other end, being even more appreciated since the societal restrictions have made people treasure physical and social aspects that are overall available in dense urban places.

5. Results

5.1. Perceived crowding, stress and pleasantness across dense urban squares

The quantitative data across the four studied squares showed a variety of different perceived levels of crowding, stress and pleasantness. Two squares, Lilla torg and Triangelorget, were perceived as more crowded than the other two squares, Gustav Adolfs torg and Konsthallstorget. The two squares with a higher level of perceived crowding, were also the smallest squares in the sample in terms of surface and the two squares with lower levels of perceived crowding were two larger squares. The bigger squares (Gustav Adolfs torg and Konsthallstorget) were not experienced as particularly crowded at all while the smaller squares (Lilla torg and Triangelorget) were slightly crowded (see figure 19).

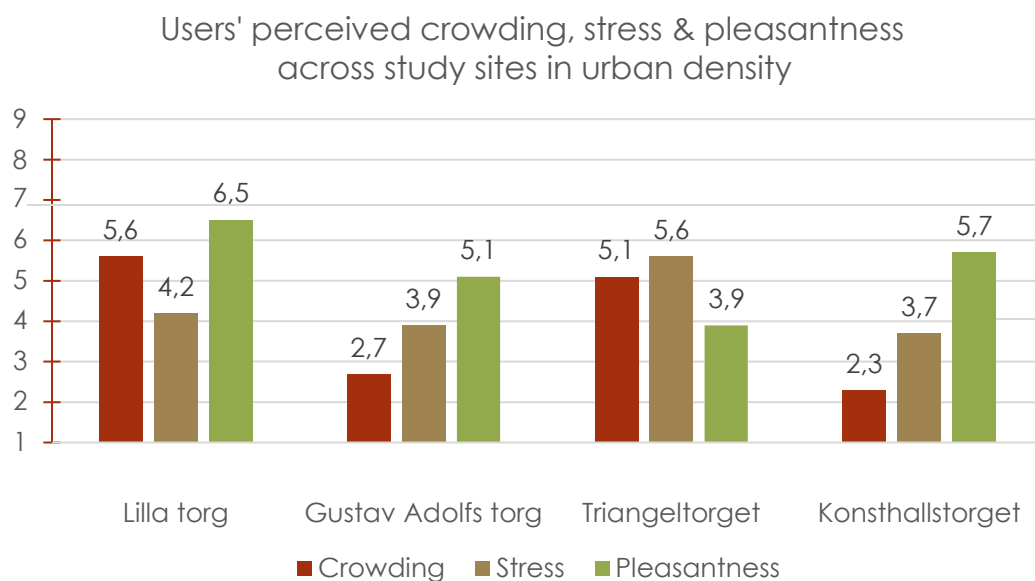


Figure 19. The mean value of received responses from participants regarding their perception of crowding, stress and pleasantness across the four different studied case site squares. Objective data was reported on Likert scale 1-9, where '1-5' indicated 'not at all/slightly so' and '6-9' indicated 'moderately/extremely so'.

None of the studied squares were perceived as particularly stressful, except for one of the smaller squares, Triangelorget. Triangelorget is deemed to have a higher level of crowding and a high level of stress. Across the four squares, crowding and stress seems to be associated in people's perceptions.

Furthermore, the data showed a variation of perceived pleasantness across the case site squares. The bigger squares that were perceived as less crowded and stressful, were also perceived as more pleasant and scored above medium on the scale. On the other hand, the

two smaller squares indicated very different levels of perceived pleasantness. Lilla torg got a relatively high score on perceived pleasantness and was perceived pleasant above medium. This implies that it is a square that is perceived as crowded and stressful to a certain degree while still being pleasant.

On the other end of the perceived pleasantness scale, was Triangeltorget. The other smaller square showed instead results of having high crowding and stress, combined with a low perceived pleasantness. This indicate that there can be an opposite correlation between the results of the two smaller squares.

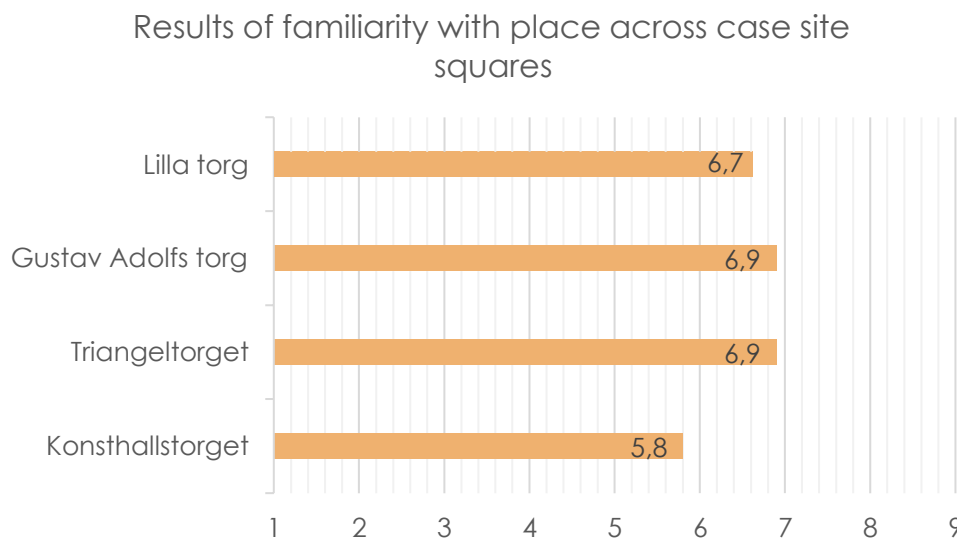


Figure 20. Graph showing average of respondents' familiarity with place across the four different case site squares. Objective data was reported on Likert scale 1-9, where '1-5' indicated 'not at all/slightly so' and '6-9' indicated 'moderately/extremely so'.

Henceforth, responses regarding place familiarity across the squares showed that all four squares are well known by people (see figure 20). All squares are familiar to an extent which on the Likert scale, resulted in mean values, indicating a high familiarity with place.

The results of familiarity with place across the studied case sites, implied a high place familiarity. However, the results of Triangeltorget point in another direction, as perceived pleasantness is low regardless of people's familiarity, which was higher. Also, one of the bigger squares, Konsthallstorget, were found to be less familiar compared to the other squares. This suggest that familiarity do mediate environmental perceptions such as e.g., perceptions of crowding, stress and pleasantness, but it can also be related to other more complex environmental aspects, such as e.g., environmental stressors and other situational aspects including individual preferences, effecting human – environment relations.

5.1.1. The role of familiarity with place

The results seem to point out that respondents' overall familiarity with place in explored dense case sites are moderately high with an average of $M=6,6$ on the 9-point Likert scale. This suggest that the squares are more well known than not, by the participants. In relation to place familiarity, the quantitative data results also show that the dense urban places are perceived as more pleasant than not, with the average of $M=5,3$ on the same 9-point Likert scale (see figure 21). The respondents also answered that the different case site squares are on an average visited several times a month which further indicate that the places are well known and often visited or passed by.

These overall results from the study suggests a reference point where the level of perceived pleasantness goes hand in hand with familiarity. This imply that dense urban places that are familiar to people, are also perceived as more pleasant. Furthermore, familiarity with place is rated and perceived higher in users' responses, with an above average or moderately high familiarity compared to results of perceived pleasantness which is lower. Indicating that, they are connected from a descriptive point of view. The reason for this or factors that come into play, cannot be determined in this explorative study with no inferential statistics which suggests the need for future studies. Possible aspects for their connection are presented in discussions. While people's environmental perception is associated with familiarity or relation to place, the results as well as the literature confirm that situational conditions with regards to physical and social aspects of the setting also interplay.

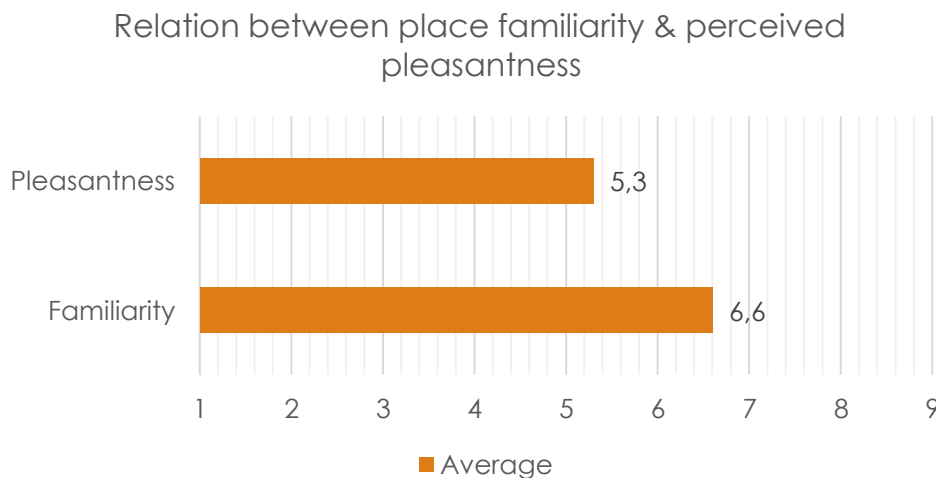


Figure 21. Above graph visualizes an average of received responses on the 9-point Likert scale regarding place familiarity and perceived pleasantness and how them relate to one another. The data is presented on a Likert scale 1-9, where "1" means "not at all" and "9" "very much".

5.1.2. Users' perception of dense physical and social aspects at city squares

Lilla torg

The qualitative results show that the respondents perceived crowding at Lilla torg in terms of many people spending time there on a small surface. The many restaurants and other services located on the small surface adds to the experience, as did the character of the surrounding buildings. However, the square is experienced by many respondents as crowded, but in a good way.

Perceived stress for Lilla torg is described in terms of many people being there at the same time, making it a noisy place at times. Too many people also made it stressful when it becomes hard to find space. Lilla torg is further described as a pleasant and social place due to people's expressions of being happy when there and the many places it offers where people can eat. The square has no immediate traffic passing by which suggests that it is not bothered by traffic noise. Lilla torg is also experienced as pleasant because it has grown trees, old houses and a unique cultural feeling that makes people in a good mood.

When given the opportunity to suggest changes for Lilla torg, the respondents said it was important to keep it as it is at large but would benefit from more greenery, more places to sit and overall reduction of the tightness in between all the restaurants and bars to create some more open space.

Gustav Adolfs torg

The qualitative results regarding crowding and stress at Gustav Adolfs torg show that the experience of crowding is attributed to people constantly crossing the square, often on their way or heading for other places. The fact that the people seem to be in a hurry were in itself deemed to add to the stress levels. In addition, the connection to adjacent trafficated and noisy roads were also acknowledged to contribute to this. On the same time, the square could be perceived as not too crowded due to the space being large and open and the crowding mainly concentrated to some parts of the square.

Respondents further described how Gustav had pleasant features such as close proximity to many things in the city, big grown tress and other vegetation as well as different stands, selling fruits and vegetables. Even though most people are passing the square rather than staying and spending time at the square; responses indicate that it is pleasant to see and watch other people and what they are doing or where they are going. Despite the results that describe many physical and social mechanisms that make the square pleasant; Gustav is also described as a boring square that feels too big and empty as well as too open in some parts of the square and a bit unsafe in other parts.

Responses regarding changes to Gustav in order for it to suit people better were unanimous as to the wanting the square to feel smaller and more intimate. The design and distribution of features in the square would also benefit from a more appealing design which would make people want to stay and spend time at Gustav rather than only passing it. The presence of traffic and traffic noise was seen as something negative and should be lessened or removed entirely. The respondents also explained that more and different places to sit would make the square nicer and that a café or restaurant in the middle or somewhere on the square would be nice and make it populated in a good way.

Triangelorget

The qualitative results for Triangelorget indicated what physical and social mechanisms that are at work to produce higher levels of crowding and stress in this dense urban place. Crowding is experienced as the square is small and located in the middle of everything in Malmö city centre with a lot of people constantly passing by. The adjacent traffic situation is highly present which effect the atmosphere at the square; experienced as a noisy environment with a high tempo and people seems to be in a hurry. Buildings surrounding the square are tall and is sometimes experienced as a wall, further giving a feeling of little available space for people to reside in.

Triangelorget is perceived as stressful because of the constant and busy traffic situation as well as the amount of and presence of a lot of people. Respondents experience that other people seem stressed and in a hurry. Triangelorget is described as a busy square where everything happens at the same time.

Other data show how big and grown trees in the square contributes in making the square more pleasant. The square has many different places where one can sit but being able to sit under the trees is deemed the nicest. Triangelorget is further experienced as an urban square where one can feel the city vibe and it is close to most things and everything people need such as e.g., restaurants, cafés, health care facilities, workplaces, stores and public transport.

When participants were asked to describe what changes Triangelorget would benefit from in order to become better suited for its users, responses were very clear and predominant. The current busy and noisy traffic situation was a main aspect where change was sought for. Respondents wished for more open space, i.e., make it bigger (compare with results from Gustav Adolfs torg), more greenery and places to sit. The square was described as a place that needs to become calmer and cosier; some suggested a café or somewhere to get coffee and that offers a place to sit down for a short while.

Konsthallstorget

Results from the qualitative data regarding Konsthallstorget show that it is neither very crowded nor stressful. Physical and social aspects related to perceptions of crowding do exist, but on a lower level. A majority of the responses indicated that people crossing are in itself often experienced as crowded because of the amount constantly passing by at a high rate. The majority of people mainly pass the square rather than staying; even so, Konsthallstorget is perceived as well populated and with different activities happening at all times. In the responses a minor conflict regarding crowding occurred. Skaters describe a big need for space in order to skate in wanted fashion which often create crowding because other people are in the way. Non-skaters on the other hand explained perceived crowding when skaters were too many at the same time, taking up a lot of space. It is a conflict of interest between users of public space as well as a collision of activities performed at the square.

The number of different activities happening at Konsthallstorget is, by the responses, experienced as stressful. Other physical and social mechanisms that cause perceived stress is described to be the busy and noisy traffic from the adjacent road.

Respondents further described that Konsthallstorget is pleasant because it is an open, light and airy place in the middle of the city; close proximity to everything and feels welcoming towards all kinds of people and activities. It is a good place to skate, it allows for children to play there and most of all, it is close to a nice park. On the other hand, responses indicate that Konsthallstorget is not as pleasant as it could be. Among the participants, many describe the square as too big, empty and with too much concrete. When given the opportunity to give responses as to how and what changes to make at Konsthallstorget, in order for it to suit better for its users, many aspects connected to physical and social structures was brought up. The square would benefit and become more pleasant if more greenery, more trees and flower beds, were to be added since it can bring both colour and shade to the otherwise open, sun roasted concrete square surface. The busy and noisy road traffic was wished to be removed or cancelled out somehow and some of the newer adjacent buildings were described as too tall and would be better if they had a lower floor count. Besides, the many other suggestions for changes to Konsthallstorget; responses also claimed that more and different places to sit and a need for making it overall cosier, were further aspect that would help make the square more pleasant, connected to physical and social aspects of the place.

5.2. Users' perception of physical and social aspects

The overall results from thematic analysis of collected qualitative data, showed that crowding, stress and pleasantness are related to each other but are also affected by a set of other physical and social dimensions related to situational aspects of the visit. From the results it can be indicated that urban density generates clear negative as well as positive aspects for user's in terms of their perception of these dense public places (see figure 22). On the other hand, a total of 15% (N=30) of the respondents also expressed that crowding and stress to some level, can be positive (i.e., city pulse, social arena and wide range of available services) and that higher levels of crowding and stress at times are expected in dense urban places, potentially generating lowered levels of perceived crowding and stress.

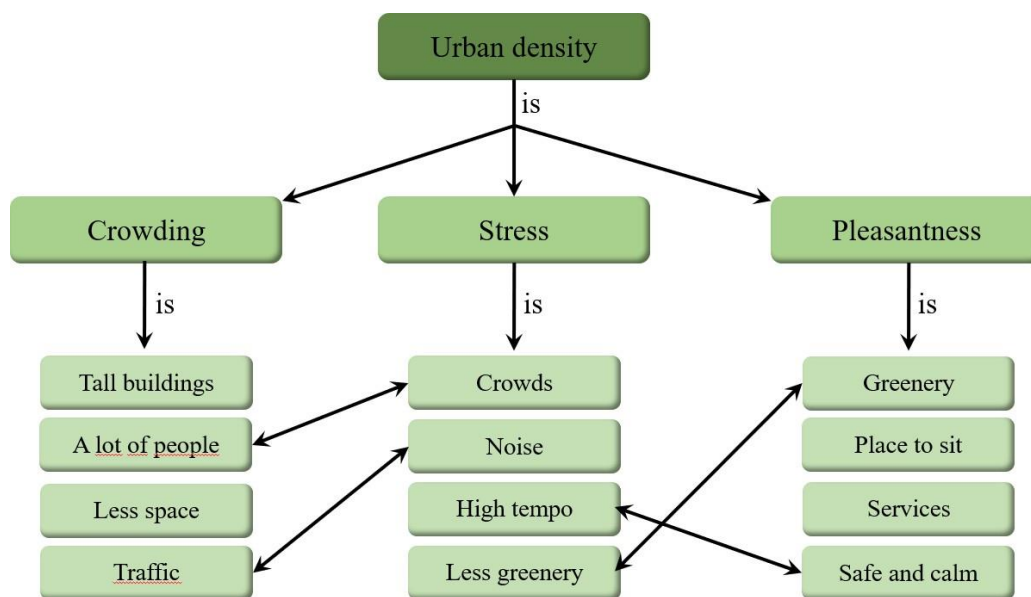


Figure 22. A mind map based on participants' answers showing how different factors associated with urban density are related to the perceptions of crowding, stress and pleasantness at the urban public squares. Also note how mechanisms are associated with each other, where e.g., a lot of people is associated with crowding including how crowds generate higher stress levels.

The results suggest an interaction between physical and social aspects in the environment which can have an effect on the respondents' perception of crowding and stress in the dense urban squares. From the responses, it seems to be the composition of the physical environment in terms of size, content and surroundings, i.e., amount of space, building character (historic or modern) and material selections (nature materials such as wood and stone or prefabricated materials such as concrete) that interplay with social aspects, i.e., amount of people, traffic, noise and activities taking place, that cause higher or lower levels of crowding and stress.

Results also indicate that the purpose of being in a dense urban public place, i.e., meeting with a friend or getting something to eat etc, may affect and generate lower levels of

crowding and stress. Physical environmental aspects such as for example nature, i.e., trees, flowers and other plantings, and water features also seem to be important physical aspects in order to give lower levels of perceived crowding and stress in dense urban places. These physical aspects also seem to go hand in hand with feelings of pleasantness.

Perceived pleasantness is associated with perceptions of crowding and stress. The dense urban places are more pleasant if it has an appealing design, connected to physical and social aspects. Higher levels of pleasantness in dense urban places seem to be had when the environment can fulfil current individual needs, e.g., somewhere to sit, some place to eat, the possibility for different activities, close proximity to services and amenities and feeling safe

A total of 23,5% (N=47) of all the respondents could not describe any particular physical or social aspects of the studied case sites that made them feel pleasant. Nevertheless, perceived pleasantness is suggested from the results, to be connected with different physical and social aspects of the environment. 8,5% (N=17) of the participants described the importance of place identity and environmental personality, which indicate that an appealing design with a clear and coherent content is experienced as more pleasant and goes hand in hand with familiarity with place (read further in section 5.4).

5.2.1. Users suggested environmental changes

The qualitative data results regarding users given opportunity to make changes to the four different case sites via the questionnaire, gave responses connected to physical as well as social aspects of the studied environments. 21,5% (N=43) of the users did not know or did not wish to make any particular changes to the studied case site squares. On the other hand, resulted the responses in that 26% (N=52) in total wanted more greenery in these dense urban places. Other changes that the users described would make these dense environments more pleasant are for example through:

- More places to sit.
- Enough space, i.e., not too big and not too small.
- Less traffic.
- Less noise.

While the respondent's suggestions for changes were mainly physical yet versatile, the predominant responses regarding the need for more greenery and nature experiences (i.e., water features and other natural affordances) including the important results mentioned in the bullet list above, show that these dense urban environments hold physical and social mechanisms that users see benefits from changing in order for them to become more attractive and pleasant which in turn could affect levels of perceived crowding and stress in urban density.

5.3. Users' experience of urban density during Covid-19 pandemic

From the data results, it appears that 60% of the respondents (N=120) at the different study sites, to a larger extent, experienced the dense urban places as unchanged despite the emergence of the Covid-19 pandemic (see figure 23). This indicates that the Covid-19 pandemic has had no or fairly little effect on dense urban places. Participants' opportunity to give qualitative measures resulted in a further explanation of their experiences of urban density in the light of the ongoing pandemic. Results of the qualitative data suggest that it is still very much the same because 'people still want to be outside and enjoy things' and 'people are meeting outside'. There does not seem to be a big difference, but it is perceived as crowded with regards to the pandemic and existing restrictions. A lot of people are continuing to populate the city's public spaces but there are 'perhaps fewer than usual'.

22% of the respondents (N=44) described an experienced change due to Covid-19, whereas the remaining 18% of the participants (N=36) did not wish to answer or did not have a particular opinion on the matter. Participants that did experience a change due to the pandemic, expressed results in the qualitative data which instead pointed out that 'less people are out' and the perceptions seemed to suggest that 'people are trying to keep more distance' because the idea of 'too much people in the same space is not good at the moment'. Many public spaces were explained as less safe at the moment and such 'places where people usually meet are negative right now which makes it different and not nice'. Although some responses still experienced crowding, either to the same or to a different extent, the urban public squares were overall less populated than before the pandemic started. 'The city feels almost empty' and more than before these results indicate that the respondents in fact experience a slight environmental change, which implies that the Covid-19 pandemic has had an effect on perceived density. Physical and social structures are still present, but responses indicate that the pandemic has lowered the frequency or intensity of the current urban density phenomenon.

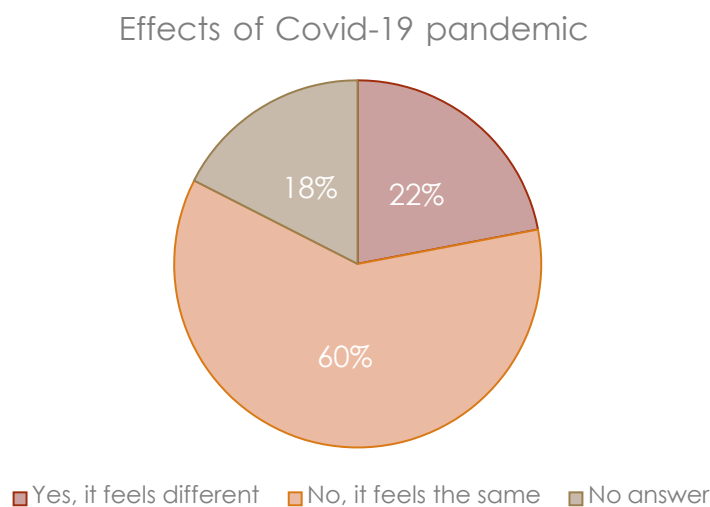


Figure 23. Showing a descriptive distribution of respondents' experiences connected to the potential effects of the Covid-19 pandemic. The quantitative data results indicate from the responses that the studied dense urban case sites have not changed due to the pandemic, although results from qualitative data might suggest otherwise.

6. Discussions

The results confirm that people perceive crowding and stress in dense urban places and that such perceptions are influenced by various physical and social aspects of the setting. The perceptions of crowding and stress seem to increase when different physical and social are combined; e.g., when the amount of people present is perceived as too high in relation to a small surface area and is especially so if the physical surrounding environment is dense and large in scale. Social density is suggested to cause crowding and stress as a result of the overall presence of many people, their overall appearance and activities taking place. On the contrary, other people are also more or less expected in urban public places, which imply that it also contributes to what seems to be an appreciated social factor. These are findings and conclusions that are in line with existing literature and previously performed studies which e.g., show that more eventful, i.e., crowded urban places are usually perceived as more pleasant and safer than deserted ones, which in turn lowers perceived crowding and stress even though perceived levels of crowding and stress still exists to some extent (Haaland et al, 2015; Joye et al, 2013; Williams et al, 1996). Literature also states that urban open spaces are important for people as they overall increase pleasantness and are attractive, because they are environment which fulfil people's need for multifunctional places that create flow in people's lives, which is connected with life satisfaction and quality of life (Gehl, 2010).

As seen from the results; while too much people in the same place can generate crowding and stressful situations, urban social life is important since it create a sense of community and a feeling of belonging which an urban lifestyle can give (Bell et al. 2001; Gifford, 2013). Previous studies indicate that it is important for people to be a part of a context which urban environments, even densified settings to some extent, can offer people that are in search of individual goal achievement and a feeling of purpose and coherence. This can partly explain how and why dense urban spaces are perceived as pleasant to a higher degree. It also includes how feelings of familiarity is created with place over time and how a higher familiarity with place suggests higher perceived pleasantness (Reis et al. 2011).

Familiarity with place is on the other hand, a fairly complex process and depend many times on individual preferences that are based upon memories and lifetime experiences (i.e., childhood, up-bringing etc.). Creating fondness for, or becoming prone to find certain places more pleasant, is a human-environment relationship that is created over time and is often termed as place attachment (i.e., an emotional bond between person and place) (Kyle et al, 2004; Ujang, 2012; Ujang & Zakariya, 2015). According to Kaplan and Kaplan (1998), people are a part of the overall structure to a place. People's perception of place therefore highly depends on individual characteristics and preferences which humans form (e.g., gender, age, background, personality features and memories) (Bell et al. 2001; Gifford & McCunn, 2013). This can also affect how people perceive their urban environment since it results in people's individual resilience, which in turn cause different health outcomes. As cities continue to become denser and less considerate of people's psychophysiological needs (e.g., restoration, access to nature, fascination and feeling of

being away from it all), it may potentially cause further health-related problems as a result of careless urban planning.

While social aspects of the environment seem to be perceived as more negative; physical aspects of urban public places also seem to be of importance. Theoretical perspectives as well as data from the responses indicate an affinity for humans basic and inherent need for space combined with certain physical environmental attributes that are supportive of people's well-being and health. Empirical studies have also shown that people's perception of their physical living environment is fundamental for psychophysiological health outcomes (Fassio et al. 2013). Results indicated that people perceived dense urban spaces to have physically less space and that available open spaces compared to other built structures were not proportional and on a human scale, which in turn contributed to lower perceived pleasantness. Results showed e.g. that high-rise buildings were mainly perceived as something negative. It was also pointed out in this study that some buildings that were perceived as too tall, often created a wall-like appearance which further made the surrounding surfaces perceived as even smaller. Buildings surrounding the studied dense urban squares, that were perceived and described as more pleasant, included buildings with fewer storeys (about 1-5 storeys high) and with an older building character that had a traditional, historic and cultural feeling, which at the moment is a very different architectural design compared with today's modern conventional architectural standards.

The results from this study are very much in line with previous findings. For instance, a dissertation by Sternudd (2007), suggest that people find traditional housing styles more attractive, where a small-town idyll is preferred over high-rise buildings that are perceived as cold and unwelcoming.

These findings confirm literature regarding human health outcomes in built environments where mechanisms associated with nature and natural elements are few which affect people's environmental experience, where built settings become more unattractive, unsafe and does not tend to people's need for nature, space and recovery. Although people's overall need for space is difficult to define; space is typically regulated by individual and situational factors in relation to physical and social structures present in the environment (Bell et al. 2001; Tuan, 2008).

People's responses in the study further indicate that physically and socially compact urban environments are more tolerated and preferred by some more than others. It implies that the current densification processes are at risk of causing negative health outcomes. While it is an issue which hold a growing concern, the data is at the moment not showing an immediate problem; it might instead suggest that perhaps other aspects of urban dwellers lives are becoming increasingly important in order for people to continue to find restoration and decrease stress to stay healthy in the city (Bell et al. 2001; Bilotta et al. 2013; Bonnes et al. 2013).

Even though people in the city of Malmö appear to experience both crowding and stress to a certain degree while at the same time experiencing pleasantness to more or less the same extent. The city is continuing to become denser and are at risk of gradually decreasing important green structures, which are important restorative settings. And even though

natural environments are conducive to recovery and health; people in dense urban environments will not be able to turn to these spaces to the same extent.

The overall findings from this study, indicates that urban dwellers in the city of Malmö want more greenery and natural elements in dense urban public spaces. In addition, the results also imply that the urban public squares could become more pleasant through making changes that fit people's needs in dense spaces. Besides wanting to add more natural features, the respondents wanted to make changes which allowed them to have e.g., more places to sit, closeness to services and feeling safer. Whereas some physical or social aspects wished to be added, other urban mechanisms, such as e.g., traffic, noise and other environmental stressors could preferably be reduced or vanish completely.

In summary, this study has been important in order to gain more knowledge that is connected with the line of work that the thesis author is in, working as an urban planner. Urban planning strategies that continue to aim towards urban densification seem to have its clear pros and cons. Urban planning have always consisted of different interests that needs to be weighed against each other. Priorities must often be made, which can cause interests to have to become de-prioritized, reduced or even removed. Strategies and processes of urban densification are resulting in this to different extent, which initially created the thesis author's concern.

One must not forget that there lays a big responsibility in creating and building urban environments. Cities are built by people, for people and should have people in mind. It is essential that the ideals for a liveable city and its attractiveness does imply a wear and tear on human and well-being. Physical and social infrastructure of urban areas should support people's lives. Sustainable, attractive and health promoting cities can be created for people if urban development is performed with care and attention; and considering the line of research which brings light to this topic.

7. References

- Adli, M., (2011). Urban stress and mental health. Hong Kong. Urban age – a worldwide investigation into the future of cities. London School of Economics.
- Andrade, C., & Devlin, S., (2015) Stress reduction in the hospital room: applying Ulrich's theory of supportive design. *Journal of environmental psychology*, Vol. 41, pp. 125–134.
- Basu, A., Duvall, J., & Kaplan, R., (2019) Attention restoration theory: exploring the role of soft fascination and mental bandwidth. *Environment and behavior*, Vol.51, pp. 1055-1081.
- Bell, P, A., Greene, T, C., Fisher, J, D., & Baum, A., (2001). *Environmental psychology*. 5th edition. Orlando. Harcourt Inc.
- Bilotta, E., & Evans, G W., (2013) Environmental stress. In: Steg, L., Van den Berg, A E., & de Groot, J I M., (eds.), *Environmental psychology- an introduction*. 1st edition. Chichester: Blackwell Publishing, pp. 28-35.
- Bonnes, M., Scopelliti, M., Fornara, F., & Carrus, G., (2013) Urban environmental quality. In: Steg, L., Van den Berg, A E., & de Groot, J I M., (eds.), *Environmental psychology- an introduction*. 1st edition. Chichester: Blackwell Publishing, pp. 98-103.
- Booth, A., & Cowell, J., (1976). Crowding and health. *Journal of Health and Social Behavior*. Volume 17. pp. 204–220.
- Boverket (2004) *Hållbara städer och tätorter i Sverige – förslag till strategi*. Karlskrona. Boverket. Public document. Recovered from: <https://www.boverket.se/sv/om-boverket/publicerat-av-boverket/publikationer/2004/hallbara-stader-och-tatorter-i-sverige/> [2020-05-01]
- Boverket (2016). *Rätt tätt: en idéskrift om förtätning av städer*. Karlskrona: Boverket. Public document. Recovered from: <https://www.boverket.se/sv/om-boverket/publicerat-av-boverket/publikationer/2016/ratt-tatt/> [2020-05-06]
- Bramley, G., & Power, S., (2009) Urban form and social sustainability: the role of density and housing type. *Environment and Planning B Planning and Design*, Vol. 36, pp. 30-48.
- Brown, V., & Clarke, V., (2006) Using thematic analysis in psychology. *Qualitative Research in Psychology* Vol. 3. pp. 77–101.

Cohen, S., Evans, G W., Stokols, D., & Krantz, D S., (1986) Behavior, Health and Environmental Stress. 1st edition: Heidelberg. Springer US.

DePoy, E., & Gitlin, N. L., (2016) Introduction to research. 5th edition. USA. Elsevier Health Sciences. ISBN: 9780323261722.

Dye, C., (2008) Health and urban living, Science magazine. Vol. 319. pp. 766-769.

Fassio, O., Rollero, C., & De Piccoli, N., (2013) Health, quality of life and population density: a preliminary study on “contextualized” quality of life. Social Indicators Research. Vol. 110, No. 2, pp 479-488.

Galea, S., Freudenberg, N., & Vlahov, D., (2005) Cities and population health. Social science and Medicine (vol. 60), pp. 1017-1033.

Gehl, J. (2010). Cities for People. Washington, D.C.: Island Press.

Geetu, H., & Tripathi, S, K., (2017). The Reciprocal Effect of Crowding and Experiential Stress. Journal of Humanities and Social Science. Volume 22. pp. 16-19.

Gifford, R & McCunn, L J., (2013) Appraisals of built environments and approaches to building design that promote well-being and healthy behaviour. In: Steg, L., Van den Berg, A E., & de Groot, J I M., (eds.), Environmental psychology- an introduction. 1st edition. Chichester: Blackwell Publishing, pp. 88-89.

Grahn, Patrik & Stigsdotter, Ulrika K. (2010), The Relation between Perceived Sensory Dimensions of Urban Green Space and Stress Restoration, Landscape and Urban Planning, Vol. 94, Nr. 3-4, s. 264-275.

Haaland, C., & Konijnendijk van den Bosch, C., (2015) Challenges and strategies for urban green-space planning in cities undergoing densification: A review. Urban forestry & Urban greening. Volume 14. pp. 760-771.

Hartig, T., Evans, G., Jamner, L., Davis, D., Gärling, T., (2003) Tracking restoration in natural and urban field settings, Journal of environmental psychology, vol. 23, pp. 109-123.

Heberlein, T. A., & Vaske, J.J., (1977) Crowding and visitor conflict on the Bois Brule River. Madison, WI: University of Wisconsin Water Resources Center.

Hedblom, M., Gunnarsson, B., Iravani, B., Knez, I., Schaefer, M., Thorsson, P., Lundström, J., (2018) Reduction of physiological stress by urban green space in a multisensory virtual experiment. Scientific reports. Vol. 9. Issue. 10113. pp. 1-11.

Hotwani, G P., Tripaathi, S K., (2017) The reciprocal effect of crowding and experiential stress. *Journal of humanities and social science*. Volume 22. Issue 3. pp. 16-19.

Jackson, E. L., (2002) The relationship of urban design to human health and condition. *Landscape and urban planning*, vol. 64, pp. 191-200.

Jakobsson, Anna (2009), *Experiencing Landscape While Walking – On the Interplay between Garden Design, Sensory Experience and Medical Spa Philosophy at Ronneby Spa*, Diss. Alnarp: Sveriges Lantbruksuniversitet.

Joye, Y., & Van den Berg, A E., (2013) Restorative environments. In: Steg, L., Van den Berg, A E., & de Groot, J I M., (eds.), *Environmental psychology- an introduction*. 1st edition. Chichester: Blackwell Publishing, pp. 58-65.

Kaplan, Rachel (1985), The analysis of perception via preference: A strategy for studying how the environment is experienced, *Landscape Planning*, Vol. 12, Nr.2, pp. 161-176.

Kaplan, R., (1992) The psychological benefits of nearby nature. In: Relf, D., (Eds.) *The role of horticulture in human well-being and social development*. Portland, Oregon, Timber Press. pp. 125-133.

Kaplan, S., (1979), *Perception and landscape: Conceptions and misconceptions*, I: *Proceedings of Our National Landscape Conference*, USDA Forest Service General Technical Report PSW 35, pp. 241-248.

Kaplan, R., & Kaplan, S., (1989) *The experience of nature: A psychological perspective*. Cambridge university press. New York.

Kaplan, R., & Kaplan, S., (1998), *With people in mind*, Washington: Island press.

Kasim, J A., Yusof, M J M., Shafri, H Z M., (2019) The many benefits of urban green spaces. *Journal of infrastructure development*, Vol. 2, Issue. 1. pp. 103-116.

Knöll, M., Neuheuser, K., Cleff, T., & Rudolph-Cleff, A., (2017) A tool to predict perceived urban stress in open public spaces. *Urban Analytics and City Science*. Sage Pub, pp. 1-17.

Küller, R., (1991). Environmental assessment from a neuropsychological perspective. In: Garling, T & Evans, G, W., (Eds) *Environment, cognition and action – An integrated approach*. pp. 111-147. Oxford University Press. New York.

Küller, R., (1979). Social crowding and the complexity of the built environment: a theoretical and experimental framework. In: Gürkaynak, M, R., et al (Eds) *Human*

Consequences of Crowding. pp. 139-140. Plenum Press. New York.

Kyle, G. T., Mowen, A. J., & Tarrant, M., (2004). Linking place preferences with place meaning: an examination of the relationship between place motivation and place attachment. *Journal of Environmental Psychology*. Volume 24. pp. 439-454.

Lepore, S. J., & Allen, K. M., (2000). Cross-cultural differences in tolerance for crowding: fact or fiction? *Journal of personality and social psychology*. Volume 79. pp. 204-210.

Lepore, S. J., Evans, G. W., & Palsane, N., (2003). Social Hassles and Psychological Health in the Context of Chronic Crowding. *Journal of Health and Social Behavior*. Volume 32. pp. 357-367.

Lin, B., Meyers, J., & Barnett, G., (2015) Understanding the potential loss and inequities of green space distribution with urban densification. *Urban forestry & Urban greening*, Volume 14. pp. 952-958.

Low, S. M., & Lawrence-Zúñiga, D., (2003), *The anthropology of space and place*, Oxford: Blackwell publishing.

Low, S. M., & Lawrence, D. L., (1990), *The Built Environment and Spatial Form*, In: *Annual Review of Anthropology*, vol. 19, s. 453-505.

Malmö stad (2019) *Befolkning*. Recovered from: <https://theconversation.com/cities-increase-your-risk-of-depression-anxiety-and-psychosis-but-bring-mental-health-benefits-too-128911> [2020-10-03]

Malmö stad (2019) *Gustav Adolfs torg*. Recovered from: <https://malmo.se/Uppleva-och-gora/Arkitektur-och-kulturarv/Torg-A-O/Gustav-Adolfs-torg.html> [2020-04-28]

Malmö stad (2019) *Lilla torg*. Recovered from: <https://malmo.se/Uppleva-och-gora/Arkitektur-och-kulturarv/Torg-A-O/Lilla-Torg.html> [2020-04-28]

Malmö stad (2017) *Triangeln*, Recovered from: <https://malmo.se/Uppleva-och-gora/Arkitektur-och-kulturarv/Kulturarv-Malmo/T-X/Triangeln.html> [2020-05-11]

Malmö stad (2020) *Triangelstorget blir öppnare och grönnare*. Recovered from: <https://malmo.se/Service/Var-stad-och-var-omgivning/Nyheter-Var-stad-och-var-omgivning/2020-02-14-Triangelstorget-blir-oppnare-och-gronnare.html> [2020-05-05]

Malmö stad (2018). *Översiktsplan för Malmö – Planstrategi*. Public document. Recovered from: <https://malmo.se/op> [2020-04-28]

Malmö Stadsbyggnadskontor (2008) Bebyggelsetäthet och exploateringstal i Malmö. Public document.

Mechelli, A., (2019) Cities increase your risk of depression, anxiety and psychosis – but bring mental health benefits too. *The conversation*. Recovered from: <https://theconversation.com/cities-increase-your-risk-of-depression-anxiety-and-psychosis-but-bring-mental-health-benefits-too-128911> [2020-10-02]

Medvedeva, R A., Safina, G R., Fedorova, V A., (2017) Urban densification: features, environmental problems and prospects. *International journal of green pharmacy*. Vol. 11. Issue. 4. pp. 868-871.

Mumford, L. (1961). *The City in History: its origins, its transformation, and its prospects*. New York: Harcourt Brace Jovanovich, Inc.

Newman, P., (2006) The environmental impact of cities. *Environment and urbanization*, vol. 18 (2), pp. 275-295. Recovered from: <https://journals.sagepub.com/doi/pdf/10.1177/0956247806069599> [2020-10-02]

Newman, P., & Kenworthy, J. (1999) *Sustainability and Cities*. Washington, D.C.: Island Press.

Ode-Sang, Å., Knez, I., Gunnarsson, B., Hedblom, M., (2016) The effects of naturalness, gender and age on how green space is perceived and used. *Urban forestry & Urban greenery*. Vol. 18. pp. 268–276.

Parsons, R., (1991) The potential influences of environmental perception on human health. *Journal of Environmental Psychology*. Volume 11. pp. 1-23.

Peskin, M., & Newell, F. N., (2004) Familiarity breeds attraction: Effects of exposure on the attractiveness of typical and distinctive faces. *Perception*. Volume 33. pp. 147-157.

Reis, H.T., Maniaci, M. R., Caprariello, P. A., Eastwick, P. W., & Finkel, E. J., (2011) Familiarity does indeed promote attraction in live interaction. *Journal of personality and social psychology*. Volume 101, Issue 3. pp. 557-570.

SCB (2020) *Tätorter i Sverige*. Recovered from: <https://www.scb.se/hitta-statistik/sverige-i-siffror/miljo/tatorter-i-sverige/> [2020-10-05]

Seamon, D., (2000) A way of seeing people and place: phenomenology in environment-behavior research, In: Wapner, S., Demick, J., Yamamoto, C, T., & Minami, H., (red.) Therotical perspectives in environment-behavior research, New York: Springer US, pp. 157-178.

Skate Malmö (xxxx) *Konsthallstorget*, Recovered from:
<https://skatemalmo.se/spots/konsthallstorget-aka-svampen/> [2020-05-11]

Skovbro, A., (2002). Urban densification – a sustainable urban policy? Southampton. The Sustainable City II. WIT Press. pp. 517-527.

Snell, T., & Bhullar, N., (2019) Are cities bad for you? *Inpsych*, vol. 41(6). Recovered from: <https://www.psychology.org.au/for-members/publications/inpsych/2019/december/Are-cities-bad-for-you> [2020-10-05]

Spirn, Anne Whiston (1998), *Language of Landscape*. New Haven and London: Yale University Press.

Stack, K., & Shultis, J., (2013) Implications of attention restoration theory for leisure planners and managers, *Leisure/Loisir*, Vol. 37, No.1, pp. 1-16.

Sternudd, C., (2007) *Images of the small town - on aesthetic evaluation of a townscape*. Diss. Lund University. Lund. KFS AB.
[https://portal.research.lu.se/portal/sv/publications/bilder-av-smaastaden--om-estetisk-vardering-av-en-stadstyp-images-of-the-small-town-on-aesthetic-evaluation-of-a-townscape\(b24c7cb2-8a74-4c02-9fd7-5c130e6f274d\).html](https://portal.research.lu.se/portal/sv/publications/bilder-av-smaastaden--om-estetisk-vardering-av-en-stadstyp-images-of-the-small-town-on-aesthetic-evaluation-of-a-townscape(b24c7cb2-8a74-4c02-9fd7-5c130e6f274d).html)

Ståhle, A. (2008). Compact sprawl: Exploring public open space and contradictions in urban density. (Doctors thesis, Trita-ark, 2008:6) Stockholm: KTH.

Townsend, M., Henderson-Wilson, C., Ramkissoon, H., & Weerasuriya, R., (2018) Therapeutic landscapes, restorative environments, place attachment and well-being. In: Frumkin, H., (eds.), *Oxford textbook of nature and public health: the role of nature in improving the health of a population*. Oxford, University Press, pp. 57-62.

Tuan, Yi-Fu., (2008). *Space and Place – The perspective of experience*. 6th edition. Minneapolis. University of Minnesota Press.

Ujang, N., (2012) Place attachment and continuity of urban place identity. *Procedia – social and behavioural sciences*. Volume 49. pp. 156-167.

Ujang, N., & Zakariya, K., (2015) Place attachment and the value of place in the life of the users. *Procedia – social and behavioural sciences*. Volume 168. pp. 373-380.

Ulrich, R. S., (1984) Aesthetic and affective responses to natural environment. In: Altman, I., & Wohlwill, J. F., (Eds.) *Behavior and the natural environment*. New York, Plenum. pp. 85-125.

Ulrich, R. S., Simons, R. F., Losito, B. D., Fiorito, E., Miles, M. A., & Zelson, M., (1991). Stress recovery during exposure to natural and urban environments. *Journal of environmental psychology*. Volume 11. pp. 201-230.

Van den Berg, A., & Staats, H., (2018) Environmental psychology. In: Frumkin, H., (eds.), *Oxford textbook of nature and public health: the role of nature in improving the health of a population*. Oxford, University Press, pp. 51-56.

Wheeler, S. (2014). *Infill Development*. In: S. Wheeler (Ed.), *Sustainable Urban Development Reader*. New York: Routledge.

White arkitekter (xxxx) *Öppen scen på Konsthallstorget*, Recovered from: <https://whitearkitekter.com/se/project/st-johannesplan/> [2020-05-12]

WHO (2009) *The global health observatory*. Recovered from: <https://www.who.int/data/gho/data/countries> [2020-11-07]

Williams, K., Burtons, E., & Jenks, M. (1996). Achieving the Compact City through Intensification: An Acceptable Option? In M. Jenks, E. Burton & K. Williams (Ed.), *The Compact City - A Sustainable Urban Form?* (s. 83-94). London: Spon Press.

Acknowledgments

I wish to direct a big thank you to Elizabeth Marcheschi, supervisor and Fredrika Mårtensson, co-supervisor, who have aided me during this last part of my journey towards receiving a master's in landscape architecture. This thesis would never have come together without the presence of my supportive boyfriend, family and friends. Without much needed hugs, shoulders to lean on and all the showers with supportive words; this experience and writing process would have been completely different. For this I am and will be forever grateful. I also believe that the process of thesis writing has been a lot of things, including tough, educative and frustrating. It is through this master's that I hope to build a career where I feel that I can make a difference within urban planning and urban development.

Lastly, I want to thank my constant companion, my dog Tia. She is the one who I have always taken with me on all the walks, when I needed a break from writing and some time to clear my head.

A handwritten signature in black ink, appearing to read 'Anna F.' with a long, sweeping horizontal line extending to the right.

8. Appendix 1

Questionnaire about people's perception of urban spaces

Hi! Could I ask for a little bit of your time? My name is Anna and I am currently writing my master's thesis where I am looking into and wish to learn more about people's perception of urban spaces. Would it be okay for me to ask you some questions about this?

Background information

Date & time: _____

Place: _____

Weather conditions: _____

Gender

- ☐ Male
- ☐ Female
- ☐ Other
- ☐ Prefer not to say

Born in: _____

Familiarity with place

The following questions are about how well you know this place. Please answer in the following questions how you experience this place by indicating the answer that suits you best. The perception scale is a 9-point answer scale where 1 indicates *not at all* and 9 indicates *extremely well*.

1. How well do you know this place in the city?

1	2	3	4	5	6	7	8	9
Not at all				Slightly		Moderately		Extremely well

2. How often do you spend time in this urban space?

- ☐ Every day
- ☐ Several days a week
- ☐ Several times a month
- ☐ Sometimes
- ☐ Never

Perception of place

The following questions are about how you perceive this place in the city. Indicate in the following questions how you perceive this place and indicate the answer that suits you best. The perception scale is a 9-point answer scale where 1 indicates *not at all* and 9 indicates *extremely well*. On other questions answers are given as free text with own formulations.

1. How crowded do you perceive this place to be?

1	2	3	4	5	6	7	8	9
Not at all			Slightly		Moderately			Extremely
Crowded			Crowded		Crowded			Crowded

2. What is it that makes this place feel crowded to you?

3. How stressful do you perceive this place to be?

1	2	3	4	5	6	7	8	9
Not at all			Slightly		Moderately			Extremely
Stressful			Stressful		Stressful			Stressful

4. What is it that makes this place feel stressful to you?

5. How pleasant do you perceive this place to be?

1	2	3	4	5	6	7	8	9
Not at all			Slightly		Moderately			Extremely
Pleasant			Pleasant		Pleasant			Pleasant

6. What it is that makes this place feel pleasant to you?

7. If you had the opportunity to make changes to this place, what would you change?

8. Reflect upon if this place feels different after the start of Covid-19?

() Yes, this place feels different because_____

() No, this place feels the same as it did before because_____

9. Appendix 2

Background_place

- 1 = Lilla torg
- 2 = Gustav Adolfs torg
- 3 = Triangeltorget
- 4 = Konsthallstorget

Background_weather

- 1 = Sunny
- 2 = Sunny/cloudy
- 3 = Cloudy
- 4 = Cloudy/windy
- 5 = Windy
- 6 = Sunny/windy

Background_gender

- 1 = Male
- 2 = Female
- 3 = Other
- 4 = Prefer not to say

Background_birth year = Full answer in Id

1. Familiarity_know this place

1-5 = Not at all/slightly

6-9 = Moderately/Extremely well

2. Familiarity_spend time in_space

- 1 = Every day
- 2 = Several days a week
- 3 = Several times a month
- 4 = Sometimes
- 5 = Never

1. Perception_crowded

1-5 = Not at all/slightly

6-9 = Moderately/Extremely well

2. **Perception_crowded_factors** = Full answer in Id

3. **Perception_stressful**

1-5 = Not at all/slightly

6-9 = Moderately/Extremely well

4. **Perception_stressful_factors** = Full answer in Id

5. **Perception_pleasant**

1-5 = Not at all/slightly

6-9 = Moderately/Extremely well

6. **Perception_pleasant_factors** = Full answer in Id

7. **Perception_changes** = Full answer in Id

8. **Covid-19_different**

1 = Yes

2 = No

9. **Covid-19_yes_what** = Full answer in Id

10. **Covid-19_no_what** = Full answer in Id

10. Appendix 3

Förtätningen av Malmö påverkar hälsan

Pressmeddelande - 26 Mars, 2021



Centrala Malmö attraherar med unikt boende och närheten till service. Samtidigt saknas hälsofrämjande naturliga miljöer. Foto: Jenny Leyman.

Malmö är den snabbast växande staden i landet och förtätningsprocesser pågår för att möta malmöbornas framtida behov. Trots att den täta staden sällan är en bra plats för människans hälsa och välbefinnande är Malmös attraktivitet fortsatt hög, det visar en nyligen genomförd studie vid SLU Alnarp. För att inte riskera utan i stället främja människors hälsa bör urban utveckling genom förtätning ske med försiktighet.

Städer har historiskt sett varit attraktiva platser för människan, eftersom de erbjuder möjligheter som skapar livskvalitet och funktioner som passar människors behov. Urbana miljöer har även identifierats som både fysiskt men framförallt mentalt ansträngande för människor. Hälsorelaterade problem, orsakade av de förutsättningar som finns tillgängliga i urbana miljöer, är svåra att återhämta sig från om de miljöer som tillåter återhämtning inte finns.

- Naturliga miljöer är däremot identifierade som hälsofrämjande. Miljöer som i dagsläget minskar i våra städer, till följd av förtätningsprocesser, säger Anna Jönsson, landskapsarkitekt på Malmö stad och Mastersstudent på SLU.

I ett mastersarbete vid SLU Alnarp genomförde hon sommaren 2020 en utforskande studie om förtätningsprocesser i Malmö. Studien hade som syfte att undersöka och bredda kunskapen kring hur människors hälsa påverkas i städer med pågående förtätningsprocesser.

Resultat från studien bekräftar att täta urbana platser i Malmö är associerade med negativa hälsoupplevelser. Samtidigt upplevs dessa täta miljöer även som attraktiva och trivsamma.

Vidare visar resultaten att tillgången till miljöer med natur och grönska överlag är låg. Det understryker vikten av att tillgång till naturmiljöer på olika sätt är en avgörande faktor för en fortsatt positiv upplevelse av täta urbana platser.

Studien indikerar att Malmös förtätningsprocesser i dagsläget trots allt skett på ett sätt som inte påverkar stadens fortsatta attraktivitet.

- Fortsatt stadsutveckling och förtätning måste ändå ske med försiktighet. Stor uppmärksamhet bör ägnas åt att ta hänsyn till människan för att skapa urbana miljöer som främjar hälsa och välmående, säger Anna Jönsson.

Urban förtätning är idag ett globalt fenomen och är en stadsplaneringsstrategi som delvis kan lösa de problem som uppstår vid stor befolkningsökning, samtidigt som viktig jordbruksmark sparas.

För mer information:

<https://malmo.se/Stadsutveckling.html>

<https://www.boverket.se/globalassets/publikationer/dokument/2016/ratt-tatt-en-ideskrift-om-fortatning-av-stader-orter.pdf>

<https://www.slu.se/institutioner/institutionen-for-manniska-och-samhalle/>

<https://www.slu.se/utbildning/program-kurser/program-pa-avancerad-niva1/outdoor-environments-for-health-and-well-being/>



Vid frågor vänligen kontakta:

Anna Jönsson, Landskapsarkitekt på Malmö stad och
Mastersstudent på SLU.

E-post: anna.joensson8@hotmail.com

Telefon: 0767-71 31 41

<https://www.linkedin.com/in/anna-jönsson-4b0b881a8/>